

**AMENDMENTS TO THE SPECIFICATION:**

*Please amend the caption on page 3, line 12, as follows:*

**BRIEF DESCRIPTION OF THE INVENTIONSUMMARY**

*Please amend the paragraph beginning at page 3, line 14, and continuing to page 3, line 15, as follows:*

~~To achieve the above object, the present invention technology is based on the~~  
approach which is exemplary described in the following with respect to the OFDM.

*Please amend the paragraphs beginning at page 3, line 29, and continuing to page 4, line 2, as follows:*

~~In particular, the present invention technology also~~ provides a method for frequency correction in a multicarrier system and a respective apparatus.

For the example method according to the invention, a signal comprising a stream of data signals is received and an estimated phase offset is calculated for each data signal as a function of the respective data signal. Further, as a function of the estimated phase offset of a data signal and the estimated phase offset of a data signal preceding the latter data signal, a predicted phase offset is calculated for the data signal in question. In order to perform a frequency correction of the received signal, a phase correction is performed for each data signal in dependence of the corresponding predicted phase offset.



*Please amend the paragraphs beginning at page 5, line 25 and continuing to page 6, line 6, as follows:*

Moreover, the present ~~invention~~ technology provides an apparatus for frequency correction in a multicarrier system. This apparatus comprises a receiving means for receiving a signal comprising a stream of data signals, a frequency correction means for correction of the data signals in response to a corresponding predicted phase offset, and a phase locked loop means. The phase locked loop means comprises a phase discrimination means for generating an estimated phase offset for each data signal as a function thereof and a filter means for receiving the estimated phase offsets. In dependence of the received estimated phase offsets, the filter means generates predicted phase offsets for each data signal which are employed to frequency correct the stream of data signals.

Further features of the apparatus ~~according to the invention~~ are defined in the dependent claims. In particular, it is preferred that the apparatus is operated according to one of the above described methods for a frequency correction of signals in a multicarrier system.

Moreover, the present ~~invention~~ technology provides a transceiver for wireless communication including, at least, the apparatus according to the invention, or an embodiment thereof. Also, a transceiver for wireless communication is contemplated which is capable of being operated and/or controlled by means of one of the above described methods according to the invention.

*Please amend the paragraphs beginning at page 6, line 17, and continuing to page 6, line 24, as follows:*

Fig. 2 illustrates the structure of a received data signal stream including phase reference points and estimated and predicted phase offsets according to the ~~invention~~ an example embodiment,



Fig. 3 illustrates a frequency correction apparatus according to the invention an example embodiment, and

Fig. 4 shows a diagram for frequency offsets for signals having different signal-to-noise ratios estimated according to the invention an example embodiment.

*Please amend the paragraph beginning at page 6, line 34, and continuing to page 7, line 6, as follows:*

Fig. 2 illustrates the structure of a received sample stream including the phase reference points of a frequency tracker according to the invention an example embodiment and the channel estimation (phase offset estimation) according to the invention an example embodiment. The OFDM symbols C64 of the C-preamble are used for a channel estimation and a reference phase estimation, respectively. Prior to the actual channel estimation, the two C-preamble symbols are added to obtain a higher noise suppression. As a result of this averaging process, the phase reference point of the channel estimation  $R_{ce}$  is positioned in the middle of the OFDM symbols C64 in the time domain. The actual data stream of data signals (i.e. OFDM symbols) follows the C-preamble. In the following the actual data stream is also called burst, wherein every burst comprises several OFDM symbols preceded by a C-preamble.

*Please amend the paragraph beginning at page 10, line 9, and continuing to page 10, line 11, as follows:*

The predicted phase offset  $\phi_A[k]$  and the predicted sample phase offset  $\phi_s[k]$  are transferred to the frequency correction means 6, which, in response, performs-preforms the frequency and phase correction according to the following equation:



*Please amend the paragraph beginning at page 12, line 23, and continuing to page 12, line 34, as follows:*

As an example, Fig. 4 illustrates the frequency offsets estimated according to the invention for a signal having a low signal-to-noise-ratio (SNR) and a signal having a high SNR. In both cases, the initial frequency offset is 20 kHz. As shown in Fig. 4, the frequency tracker of Fig. 3 performs a fast frequency correction for the signal having the high SNR leading to a fast acquisition. Compared thereto, the acquisition for the signal having the low SNR is lower due to decision errors with respect to the frequency offset estimation for the first steps. In order to overcome effects impairing the frequency correction, e.g. due to high initial frequency offsets and very low SNR's, it is contemplated to use a decoding and recoding procedure being performed downstream the subcarrier demodulation means 10 of Fig. 3. Here it is possible that the output  $u[k]$  of the subcarrier demodulation means 10 are first decoded and subsequently recoded before being remodulated to obtain the symbols  $A_m[k]$ .